

Request for Reconsideration:

Applicant is amending claims 1, 3, and 4, merely to clarify the description of the claimed invention. No new matter is added by the foregoing amendments. Previously, Applicant canceled claims 9, 13, and 16, and withdrew claims 2, 6, 8, and 10 from consideration. Accordingly, claims 1, 3-5, 7, 11, 12, 14, 15, and 17-22 currently are pending in the present application. Applicant respectfully requests that the Examiner enter the foregoing amendments and that the Examiner reconsider the above-captioned patent application in view of the foregoing amendments and the following remarks.

Remarks:

1. Objection and Rejections.

The Office Action objects to the specification because the equation for loss Lo allegedly does not appear in Para. [0045] of the published application. The Office Action objects to claims 1, 3, and 4, because the phrase “such as” allegedly renders these claims indefinite. Claims 1, 3-5, 7, 11, 12, 14, 15, and 17-22 stand rejected under 35 U.S.C. § 112, ¶2, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1, 5, 7, and 9 stand rejected under 35 U.S.C. § 103(a), as allegedly rendered obvious by U.S. Patent No. 5,068,777 to Ito in view of U.S. Patent No. 5,923,135 to Takeda. Moreover, claims 3, 4, 5, 11, 12, 14, 15, and 17-22 stand rejected under 35 U.S.C. § 103(a), as allegedly rendered obvious by Ito in view of U.S. Patent No. 5,844,399 to Stuart. The Examiner has made the rejections **final** by this Office Action. Applicant respectfully traverses.

2. Objection to the Specification.

The Office Action objects to the specification because the equation for Lo allegedly does not appear in Para. [0045] of the published application. Applicant is amending Para. [0045] to correct a minor typographical error in the equation for Lo . The originally-filed disclosure supports this amendment as shown by Para. [0059] of the published application, which correctly states the equation for Lo . Published Patent Application No. US 2004/0124808 A1 to Hirono, Para. [0059]. Therefore, Applicant respectfully requests that the Examiner withdraw the objection to the specification.

3 Objections to the Claims.

The Office Action objects to claim 1, 3, and 4, because the preamble of the these claims use the exemplary phrase “such as.” Applicant is amending claims 1, 3, and 4 by deleting

the phrase “such as a three-phase inverter” from the preambles of those claims. Applicant respectfully submits that the inventions described in claims 1, 3, and 4 may be used with other types of power converters besides a three-phase inverter, which was listed merely as an example of a power converter suitable for use with the claimed inventions and is not relied upon to distinguish the claimed inventions over the art of record. See MPEP 2111.02(II). These amendments are not narrowing amendments and should not be construed as a disavowal or disclaimer of subject matter by Applicant. In view of the amendments deleting the language to which the Office Action objects, Applicant respectfully requests that the Examiner withdraw the objection to the claims.

4. Indefiniteness Rejections.

The Office Action rejects claims 1, 3-5, 7, 11, 12, 14, 15, and 17-22 as allegedly indefinite. The Office Action contends that it is unclear to which loss Applicant refers by the element “the loss of the switching element,” as described by claim 3. The Office Action also contends that it is unclear to which loss Applicant refers by the element “the loss calculated,” as described by claim 4. Finally, the Office Action contends that the element of “the equation,” as described by claims 1, 3, and 4, lacks proper antecedent basis. Applicant respectfully traverses.

Applicant is amending claims 1, 3, 4 to describe “loss Lo” as a “power loss Lo.” In addition, Applicant is amending claims 1, 3, and 4, to describe “the equation” as “a first equation” and “a second equation,” respectively. In view of the foregoing amendments, Applicant respectfully requests that the Examiner withdraw the indefiniteness rejections of claims 1, 3-5, 7, 11, 12, 14, 15, and 17-22.

5 Obviousness Rejections.

In order for the Office Action to establish a prima facie case of obviousness, at least three criteria must be met. First, there must be some suggestion or motivation, either in the

references themselves or in the knowledge generally available to those of ordinary skill in the art, to modify the primary reference as proposed by the Examiner. Second, there must be a reasonable expectation of success. Third, the cited references must disclose or suggest all the claim elements. MPEP 2143. Applicant respectfully submits that the Office Action fails to establish a prima facie case of obviousness for at least the following reasons.

a. Independent Claims 1, 3, and 4

As noted above, claim 1 stands rejected as allegedly rendered obvious by Ito in view of Takeda; and claims 3 and 4 stand rejected as allegedly rendered obvious by Ito in view of Stuart. The Office Action acknowledges that Ito fails to disclose making the temperature equal to or less than a predetermined temperature limit when the junction temperature exceeds the predetermined temperature limit. Nevertheless, the Office Action contends that it would have been obvious to modify Ito in view of the Takeda and Stuart to achieve the claimed inventions of claims 1, 3, and 4. Applicant respectfully disagrees.

The Office Action fails to demonstrate the requisite motivation, teaching, or suggestion to modify Ito in view Takeda and Stuart to establish a prima facie case of obviousness. MPEP 2143.02(VI) states that if the proposed modification of a reference would change its principle of operation, then the teachings of the references are not sufficient to establish a prima facie case of obviousness. Ito describes an inverter operating in a particular carrier frequency range to suppress generation of audible noise and maintain a temperature of a switching element below a maximum allowable temperature. See, e.g., Ito, Column 3, Lines 41-47. Ito suggests that reducing the carrier frequency to reduce power loss at the switching element, and, thus, the temperature of the switching element, may cause the generation of unwanted audible noise as the carrier frequency falls into the upper limit of the human audible frequency range. See, e.g., Ito, Column 3, Lines 33-40. As a result, Ito's inverter operates using

a carrier frequency f_c disposed within a range of predetermined frequency limits ($f_{cmin} - f_{cmax}$), which varies in accordance with changes in temperature T_O of the controllable element. See, e.g., Ito, Column 5, Lines 15-22; **Fig. 3**. The lower limit of the carrier frequency (f_{cmin}) is determined by the acceptable noise and output current. See, e.g., Ito, Column 3, Lines 59-61. Thus, the temperature compensation mechanism of Ito is controlled as a function of carrier frequency f_c to ensure that the carrier frequency does not fall below f_{cmin} and cause the generation of undesirable auditory noise.

Further, the temperature compensation mechanism of Ito explicitly discloses that T_O does not exceed a maximum allowable temperature T_R of controllable element. According to MPEP 2141.03(V), a reference must be considered in its entirety, including those portions that teach away from the claimed invention. Ito states that T_O may rise as result of the conditions or environment under which the inverter is used. See, e.g., Ito, Column 6, Lines 46-51. As a result, Ito states that “when the temperature T_O approaches the maximum allowable temperature T_R of the controllable element, the carrier frequency f_c is lowered so as to maintain temperature T_O of the controllable element below the maximum allowable temperature T_R .” Ito, Column 6, Lines 51-56. Consequently, the proposed modifications of Ito by the Office Action in view of Takeda and Stuart contradict the explicit disclosure of Ito that teaches away from such a combination.

Accordingly, the Office Action fails to demonstrate that requisite motivation, teaching, or suggestion to make the proposed modification of Ito in view of Takeda or Stuart. Consequently, the Office Action fails to demonstrate a prima facie case of obviousness. Thus, Applicant respectfully requests that the Examiner withdraw the obviousness rejections of amended, independent claims 1, 3, and 4.

b. Dependent Claims 5, 7, 11, 12, 14, 15, and 17-22

Claims 5, 7, 11, 12, 14, 15, and 17-22 ultimately depend from one of amended, independent claims 1, 3, and 4, and, thus, incorporate each and every limitation of those independent claims. "If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." MPEP 2143.03 (citations omitted). Therefore, Applicant respectfully requests that the Examiner withdraw the obviousness rejection of dependent claims 5, 7, 11, 12, 14, 15, and 17-22.

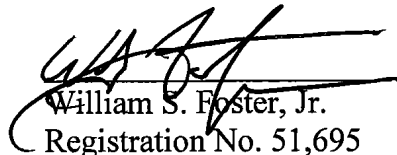
Conclusion:

Applicant maintains that the above-captioned patent application, as amended, is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that the prosecution of this application may be furthered by discussing the application, in person or by telephone, with Applicant's representative, Applicant would welcome the opportunity to do so. Applicant believes that no fees are due as a result of this responsive amendment. Nevertheless, in the event of any variance between the fees determined by Applicant and the fees determined by the U.S. Patent and Trademark Office, please charge or credit any such variance to the undersigned's **Deposit Account No. 02-0375**.

Respectfully submitted,
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